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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BEISNER, WILLIAM H

ART UNIT PAPER NUMBER

1744

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/890,855

Applicant(s)

PORTER ET AL

Examiner

William H. Beisner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-48 and 66-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 42-48 and 66-70 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. The indicated allowability of claims 42-48 and 66-70 is withdrawn in view of the newly discovered reference(s) to Romaine et al.(US 4,803,800). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 42, 43, 45, 47, 48 and 66-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Perry (US 2,048,966) as evidenced by Romaine et al.(US 4,803,800).

With respect to claim 42, the reference of Perry discloses a process for sub-culturing a microorganism that includes providing a first vessel (left vessel (2)) having a body of growth supporting medium; providing a second vessel (right vessel (2)) having a body of growth medium; arranging the first and second vessels such that medium in the first vessel and the medium in the second vessel provide a continuum for growing microorganism (See Figure 1). The device is inoculated with microorganisms at a first location (any location within the first or second vessel)(See column 2, line 45, to column 3, line 28). As the microorganism grows from the first location (the inoculation point), the microorganism is caused to grown towards a second location (any location within the same vessel as the inoculation point). Finally the

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microorganism is permitted to grow from the first vessel in the second vessel as evidenced by the reference to growth that occurs through the partition (See column 3, lines 24-28). With respect to the claim limitation that the microorganism is filamentous, the reference of Romaine et al. is cited as evidence that the mushrooms of the reference of Perry are inherently a filamentous microorganism (See the abstract of Romaine et al.). The resulting growth would provide a microorganism that is genetically stable over a prolonged period of time.

With respect to claim 43, the vessels are connected during the growth period.

With respect to claim 44, the vessels are separated after growth occurs between the vessels as evidenced at column 3, lines 24-28 of Perry.

With respect to claim 45, the reference of Perry discloses the use of additionally vessels (See column 3, lines 34-43).

With respect to claim 47, since growth occurs between the vessels, it is considered to meet the claim limitation that the microorganisms grow substantially through the entire volume of the medium.

With respect to claim 48, the same medium is employed in each vessel.

With respect to claims 66 and 67, the vessels are disconnected in order to remove the grown microorganisms.

With respect to claim 68, the second vessel is provided adjacent the second location so as to provide a continuum of medium.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 42-48 and 66-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perry (US 2,048,966) in view of Romaine et al. (US 4,803,800).

As in applicants' claimed process of growing a filamentous microorganism, Perry teaches the process of growing mushroom by providing a first vessel (2, left detachable side) with a first

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solid growth supporting medium, inoculating the first medium with microorganisms (spores), and causing it to grow, providing a second vessel (2, right detachable side) with a second growth supporting medium, arranging first and second vessels in such a way that the arrangement forms a continuum of growth supporting medium for growth of the mushroom from first vessel into the second vessel.

With respect to claim 42, the difference between the claimed invention and the teachings of Perry is that Perry is directed to the growth of mushroom, while applicants' claims are directed to the growth of generic filamentous microorganisms.

The reference of Romaine is directed to the growth of filamentous fungi, which are microscopic, spore-bearing organisms, including mushroom (See abstract and column 1).

Therefore, in view of the difference between the subject matter as a whole sought to be patented and the totality of the teachings of the prior art, as established above, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains, to follow the teachings of Perry, and grow a filamentous microorganism, such as mushroom, on a solid growth medium, first on a first vessel and then on a second vessel, which on attachment forms a continuum of the growth medium, and generalize the Perry process for any filamentous microorganism, knowing well from the teachings of Romaine, that mushrooms are considered filamentous fungus, and are microscopic spore-bearing organism.

With respect to claim 43, the reference of Perry discloses that the vessels are connected during the growth period.

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With respect to claim 44, the vessels are separated after growth occurs between the vessels as evidenced at column 3, lines 24-28 of Perry.

With respect to claim 45, the reference of Perry discloses the use of additionally vessels (See column 3, lines 34-43).

With respect to claim 46, it would have been obvious to one of ordinary skill in the art to empty the first vessel and reattach it to the second vessel with fresh medium for the known and expected result of reusing the structures of the device.

With respect to claim 47, since growth occurs between the vessels, it is considered to meet the claim limitation that the microorganisms grow substantially through the entire volume of the medium.

With respect to claim 48, the same medium is employed in each vessel.

With respect to claims 66 and 67, the vessels are disconnected in order to remove the grown microorganisms.

With respect to claim 68, the second vessel is provided adjacent the second location so as to provide a continuum of medium.

With respect to claims 69 and 70, the reference of Romaine et al. discloses that filamentous fungi are known in the art for the commercial production of organic acids, drugs and antibiotics (See column 1, lines 35-54).

In view of this teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the microorganisms grown in the process of the reference of Perry for the production and extraction of metabolites as suggested by the reference of Romaine et al. including organic acids, drugs or antibiotics.


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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Beisner whose telephone number is 571-272-1269. The examiner can normally be reached on Tues. to Fri. and alt. Mon. from 6:15am to 3:45pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 571-272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William H. Beisner
Primary Examiner
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WHB